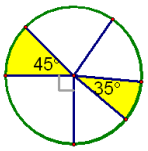
11-7 Use Geometric Probability

$$\text{Probability} = \frac{\text{\# of successes}}{\text{\# of outcomes}}$$

ex 1

What is the probability that a point (in the circle)chosen at random lies in the shaded region?



d = 18 in

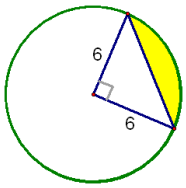
$\frac{80}{360} = .22$

$\frac{\frac{80}{360}\pi r^2}{\pi r^2}$

$$\text{Probability} = \frac{\text{\# of successes}}{\text{\# of outcomes}}$$

ex 2

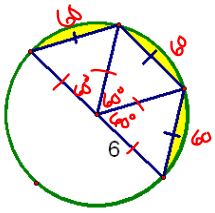
What is the probability that a point (in the circle)chosen at random lies in the shaded region?



$P = \frac{A_{sector} - A_{\triangle}}{A_{circle}}$

$\frac{\frac{90}{360}36\pi - \frac{1}{2}6\cdot 6}{(36\pi)} = .09$

Find the area of the shaded region.



$$\text{Probability} = \frac{\text{\# of successes}}{\text{\# of outcomes}}$$

What is the probability that a point (in the circle)chosen at random lies in the shaded region?

$A_{sector} - 3\,Eq\triangle$

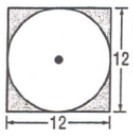
$\frac{1}{2}36\pi - 3\cdot\frac{6^2\sqrt{3}}{4}$

$18\pi - 27\sqrt{3}$

$P = \frac{(18\pi - 27\sqrt{3})}{(36\pi)} = .09$

$\frac{A_{sq} - A_{circle}}{A_{sq}}$

3.

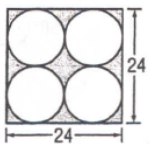


$\frac{144 - 36\pi}{144}$

$P = .21$

$\frac{A_{sq} - 4A_{circle}}{A_{sq}}$

4.



$\frac{24^2 - 4\cdot 36\pi}{24^2}$

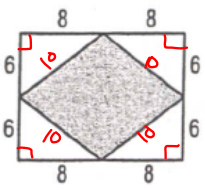
$P = .21$

$\frac{A_{Rh}}{A_{Rect}}$

$\frac{\frac{1}{2}16 \cdot 12}{16 \cdot 12}$

$P = .50$

5.

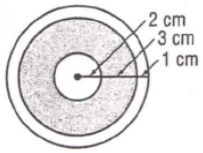


$\frac{A_{med} - A_{sm}}{A_{large}}$

$\frac{25\pi - 4\pi}{36\pi} = \frac{21\cancel{\pi}}{36\cancel{\pi}}$

$P = .58$

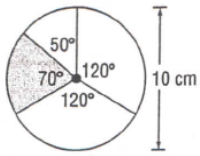
6.



$\frac{70}{360} = .19$

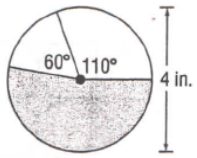
$\frac{\frac{70}{360} 25\pi}{25\pi}$

1.



$\frac{190}{360} = .53$

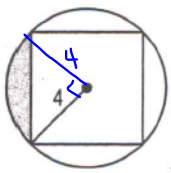
2.



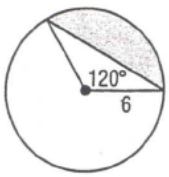
$\frac{A_{sector} - A_{\triangle}}{A_{circle}}$

$\frac{\frac{90}{360} 16\pi - \frac{1}{2} 4 \cdot 4}{16\pi} = .09$

3.



4.



6.

HW
p773-774
#s 3, 4, 8-11, 20, 21